

**Peer Exchange Questions on Asset Management
Jackson County**

A How is your organization using Asset Management in decision making and resource allocation?

- a. Who are the primary users of Asset Management and how are they using it (staff level only, director, governors, etc.)?

A1. In Jackson County

1. AMS is used to improve decision making process from “quick fix” to pro-active
2. Making sound decision to determine where, when, and how to spend limited budget

A2. To reduce maintenance cost by maintaining verses replacing

A3. An estimated cost savings of more than \$10,000,000 has been realized since AMS was implemented in 1991

A4. Who are the primary users?

- **Public Works directors use AMS to:**
 - Identify and prioritize maintenance and rehabilitation projects
 - Monitor the performance of those repairs and strategies
 - Determine the impact of funding decisions on the future condition of the network
 - Estimate funding needs
- **Elected officials** use the output of AMS for justification of budget requests pertaining to infrastructures, to weigh requests for public facility dollars against completing request for other uses of the fund, and as justification to their constituents for why a specific road/street was or not repaired
- **Maintenance managers use the AMS to:**
 - Identify potential projects
 - To prioritize facility repair needs
 - To prepare multi-year repair program
- **Finance directors use their AMS for:**
 - Financial reporting
 - Inventory of exiting asset
 - Historical cost information
 - Prepare GASB 34 report
 - Asset valuation
- **Utility companies** use their AMS to schedule planned utility work prior to facility construction
- **Risk managers** use the AMS to get information about the history of the road, bridge, or sign during certain litigation situations

- **Maintenance managers** use AMS to determine what work was done, when it was done, who did it, what resources were used, and how much was completed
- AMS is used to take a request, manage and group work orders, assign crews
- AMS is used to search for data, feature inventory, generate reports and determine material, equipment and labor needs for each maintenance activity
- AMS is used to evaluate maintenance performance and production, determine costs, and materials needed, predict maintenance needs and cost for a given budget

A6. Jackson County uses the following tools in AMS to improve the decision making process:

- **Efficiency analysis:**

County AMS will evaluate the overall relationship between total cost of system/service and total benefits. This tool helps the management to look at the impact of their decisions on the network during budget planning.

- **Evaluation process:**

County AMS provides information in the choice of the best course of action, such as identification, analysis, and assessment of the pavement performance, cost and impact of alternative courses of action and determination of the absolute value of a particular project.

- **Forecasting tools:**

Assists County to determine expected performance, impacts, and cost likely to occur under each possible alternative.

A7. Preventive maintenance:

- County AMS gives recommendations for applying a series of preventive maintenance treatments over the life of the facility to minimize life-cycle cost.
- Treatment selection is based on pavement performance and optimization model, Jackson County set aside about 60 percent of their maintenance budget for just prevention maintenance.

A8. Integration of AMS with maps –

This assists counties to view asset conditions across other geographical area, referencing information such as traffic, zoning, facility condition, R/W, utilities, etc.

A9. County's AMS provides project and network level information:

Helps us with general planning, programming and policy decisions.

A10. Data collection:

- Frequency of data collection is based on:
- Type of asset
- Age of asset
- Rate of deterioration
- Cost
- GASB 34 requirement

A11. Type of data

Different types of distress, extent and severity is used for high volume and low volume roads

A12. New condition index:

Add back points: Most of the existing AMS available today are not able to calculate a new condition index based on maintenance activities performed by maintenance divisions every day such as routine, preventive and corrective maintenance. This will provide incorrect information to managers regarding the existing conditions of facilities. Our AMS will update the existing condition index as daily maintenance is applied. This will help managers to make decisions based on current information.

A13. Maintenance selection:

Performance Modeling and Optimization Modeling is used to select the most cost effective maintenance: Maintenance selection is based on life cycle costs, performance model, rate of deterioration, and benefit-cost ratio

A14. Priority programming

Our system uses optimization model plus benefit, cost, fund availability, facility type, rate of deterioration and cost of failure to assign priority.

A15. “What if” analysis:

The true power of Jackson County AMS is its ability to permit the asset manager to quickly examine the consequences of different strategies on terms of items such as overall network conditions, backlog of needs and future fund needs.

B Benefits to using Asset Management

- a. How has your system improved or your program changed due to the use of Asset Management principal and data?

B1. Cost Saving

Past Methods (1992)

70% of all roads were
in poor and fail condition

102 people work in

maintenance division

520 accidents every year

800 complaints every year

Always had budget problems

5% of total maintenance
budget is used for preventative
maintenance

Current Methods

75% of all roads are in
are in fair to excellent condition

70 people work in maintenance division

250 accidents every year

300 complaints every year

Transfer \$1,000,000 every year from
maintenance to Capital Improvement

60% of total maintenance
maintenance budget is used
for preventative maintenance

B2. Benefits to using AMS:

- Improvements to county program quality
- Improved information and access to the information
- Improve communication
- Provides a way to analyze the consequences of various funding levels
- Provide sound basis for allocating resources
- Enhance Public Works credibility with elected officials, top management and the public
- Elimination of duplication of effort
- Quick and efficient analysis of objective data for planning, scheduling, resource allocations and budgeting
- Able to back up or justify facility improvement program to legislators

C Barriers to using Asset Management

- a. Data problems/integration/collection:
In order to ensure that an AMS fits the organization
 - it is important that the agency carefully plans what data/information it wants the AMS to provide
 - The level of resources it wants to allocated to the entire process
 - At the beginning the county used a single database which discourages users to use the system information sharing was cumbersome or impossible, proper integration of information systems is critical for successful, comprehensive asset management. A single database may not be practical.
- b. Percent of system or operation covered:
 - County AMS covers 100 percent of the transportation network
- c. Interagency cooperation:
 - At the beginning other agencies in Jackson County did not want to use the AMS because they were not involved in the decision making process and the system did not meet their needs. Today Jackson County has an integrated AMS and all users are involved in the decision making process.

C1. Barriers to using asset management:

At the beginning, the County had the following barriers:

- Fear of exposure
- Resistance to change
- Funding
- Technical issues

D Are you using Asset Management for non-highway modes and how?

E What improvements would you recommend in the implementation of Asset Management?

- a. Areas that need improvement
- b. Future research
- c. Data

E1. Limitation if exiting AMS – areas that need improvement

- Most existing AMS available today are facility information management not AMS, they provide condition data, cost data, subjective priority – but they do not have analysis tools and forecasting tools?
- They do not update condition of facility as daily routine maintenance is applied
- They do not have integration tools
- They do not consider the agency's size, budget, skill
- They ignore cause of facility problems
- They do not consider road functional classification
- They do not have tools that combine forecast of costs and conditions
- They do not have methods of assigning value to assets

E2. Factors to consider during implementation:

- Who will maintain and update data?
- Required resources
- Internal staffing
- Funding for data collection
- Funding to support the facility repair programs
- Funding for equipment and training

E3. What improvements would you recommend in the implementation of AMS:

- a. To form an agency AMS steering committee, which includes every section in the agency where AMS will have an impact.
- b. Develop a road map for AMS. Road map will define agency goal and objective, user of the system, users needs, level of sophistication of the system, and implementation plan
- c. Training – explain benefits of AMS and cost to all users.
- d. At the beginning exploring the options for funding the system development, selecting the level of sophistication for the system, type of facilities to be included in the system and identification of resources that are necessary to put the system into action
- e. Trail implementation – it is important to evaluate AMS capabilities on a small area of the facility network- testing the software before implementing the systems on the entire network

- f. Careful planning is needed before the implementation has begun
- Education and training throughout the agency
 - Improve communication among those affected by the system.

E4. Future Research:

More research needed in the following areas:

- performance modeling
- prediction tools for:
 - performance
 - budget
 - condition
 - maintenance action
 - failure modes
- risk assessment
- analysis tool for optimization
- life cycle cost analysis
- remaining life
- asset valuation
- trade off analysis
- what it analysis
- design
- update condition index of facility on daily maintenance is applied
- performance analysis
- structural evaluation
- investment
- treatment selection
- needs assessment